

expanding market, particularly because it is written from a European perspective – North American readers are already well served by a bookshelf full of generally informative and attractive volumes. The new text lacks the glossy, heavily designed style of many of its American competitors, but is nevertheless reliably written and clearly illustrated.

An introductory chapter leads to five chapters on geological resources. The last of these deals explicitly with aesthetic and scientific resources, a component of environmental geology which is often not given its full prominence. Two chapters follow on engineering geology, including an innovative coverage of engineering in extreme environments, exemplified by periglacial areas and subtropical deserts. One chapter is devoted to waste and pollution management. This might seem a brief coverage were it not that some of the impacts of resource extraction are dealt with in earlier chapters. The final three core chapters are on geological hazards. The book is therefore a well balanced treatment of the environmental geology field. The text is enlivened by frequent topic boxes, mainly describing specific case studies.

Only the final chapter gave me cause for concern. Entitled 'Environmental Geology: an urban concept', its thesis is that, with half the world's population living in cities by the end of the century, the main focus of environmental geology will be increasingly urban. I appreciate the thrust of this argument, but fear it risks being misunderstood. As Bennett and Doyle themselves recognize in Chapter 1, urban activity and growth are fuelled from a wider hinterland, much of it rural and some of it global. Too much emphasis on urban problems may divert attention from these more remote but equally serious impacts.

This matter of emphasis does not detract from the utility of Bennett and Doyle's book. It provides a reliable grounding for undergraduate modules on environmental geology at an affordable price.

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PALEOALTERITES AND PALEOSOLS by Robert Mayer, A.A. Balkema Uitgevers BV, Rotterdam, 1997. No. of pages: vi+151. Price: Hfl 150.00 (hb). ISBN 90 5410 724 3.

This book is a slightly updated English translation of a 1987 French publication which claims to be directed at geologists with little training in, or familiarity with, pedology and weathering. With this in mind, the lack of a *clear* differentiation between 'palaeosol' and 'palaeoalterite' at the outset is somewhat surprising. The book is divided into eight chapters, the last being a glossary of terms primarily derived from the classic and somewhat dated texts of Duchaufour and Brewer. Overall, it is rather unbalanced, with 81 pages devoted to 'examples of paleoalterites and paleosols', a chapter which considers a range of phenomena from root traces in palaeosols to calcretes, laterites, palaeosols on volcanic rocks, Precambrian alterites and palaeoalterites on Hercynian Basement. Each section of this chapter follows a similar structure with examples of their occurrence in various parts of the world, largely but not exclusively derived from French literature, followed by some consideration of their interpretation and significance. As a palaeopedologist, I find it difficult to assess its intended value as a text for geologists, particularly in view of the lack of reference to considerable amounts of Quaternary palaeopedological literature. Despite these reservations, however, I was impressed by some of the discussion on diagenesis and deep weathering, topics with which most pedologists and palaeopedologists need to

become more familiar. The remaining chapters considering the tectono-sedimentary context of palaeoalterites and palaeosols, (namely the tectonic, topographical, geochemical and sedimentary factors affecting their formation and preservation), methods of study and their palaeoclimatic, stratigraphic and palaeogeographic significance are somewhat disappointing, being too brief and over-ambitious. Overall, I find it difficult to make a very strong recommendation for this book. Whilst acknowledging the attempt to focus on a particular readership and to provide an introduction rather than a comprehensive outline, I feel that 'non-pedological' geologists might be better served consulting other, more rounded palaeopedological texts, e.g. Catt (1986) or Retallack (1990).

#### REFERENCES

- Catt, J. A. 1986. *Soils and Quaternary Geology: a Handbook for Field Scientists*, Clarendon Press, Oxford.  
Retallack, G. J. 1990. *Soils of the Past: an Introduction to Paleopedology*, Unwin Hyman, Boston.

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GEOMORPHOLOGICAL HAZARDS OF EUROPE by C. Embleton and C. E. Embleton-Hamman, Elsevier,

Amsterdam, 1997. No. of pages: x+524. Price: \$240.75 (hb). ISBN 0-444-88824-1.

The best way to summarize this text is to say that it provides a country-by-country European regional report on geomorphological hazards (although not every country in Europe is covered, the book deals with over 20; there are some notable omissions including Switzerland and Turkey, particularly given their levels of geomorphological research). Omissions reflect the perennial problem of out-of-time contributors to an edited volume, rather than any fault of the editors. Indeed, as the editors note, some of those most enthusiastic about the original idea still have to deliver any text at all. The book is a product of work by the Study Group on Rapid Geomorphological Hazards, set up by the International Geographical Union in 1988 under the chairmanship of Clifford Embleton. Alas, Clifford died during the preparation of the manuscript and much credit must go to his wife, Christine Embleton-Hamman, for actually finding the text, picking up the pieces and bringing the project to completion.

Much of the material is interesting and individual chapters pull together examples which will be well-known to most readers, providing an occasional feeling of *déjà vu* during the journey from country to country. It is bound to be the case in such a compilation that the individual chapters vary considerably in detail: some provide a comprehensive synthesis, while others less so. What seems most peculiar, although they are dependent territories, is to have places like Réunion in the chapter on France and the Azores in that on Portugal. Some themes recur in every chapter, such as floods

and landslides; others are more regionally concentrated, such as avalanches and permafrost; a few are local peculiarities, such as bog bursts in Ireland (Stephens, Chapter 11) and lava flows in Italy (Federici and Rodolfi, Chapter 12). A nagging doubt is whether some of the chapters reflect the geomorphological interests of the author rather than the breadth of hazards truly present within the country. Embleton and Brunsden, for example, present Great Britain in Chapter 8 as a nation with occasional seismicity (3 pages), some river flooding (6 pages), lots of landslides (12 pages), plenty of coastal problems (8 pages) and a bit of soil erosion (2 pages). Despite this, the nation-by-nation sweep is on the whole good and the description well written. There are plenty of examples, data and diagrams although some of the figures suffer from over-reduction in size. Figures 3.4 and 5.4 are two examples.

The book presents a useful synthesis of information which is on the whole well presented and interesting to delve into. I can imagine it being useful when hunting for examples to use in lectures, or for students needing material to flesh out an essay – and perhaps for visitors, wanting either to avoid geomorphologically risky places if of a nervous disposition, or to visit geomorphologically risky places when on a busman's holiday.

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